

17. Town of Superior/Arizona Water Company-Superior

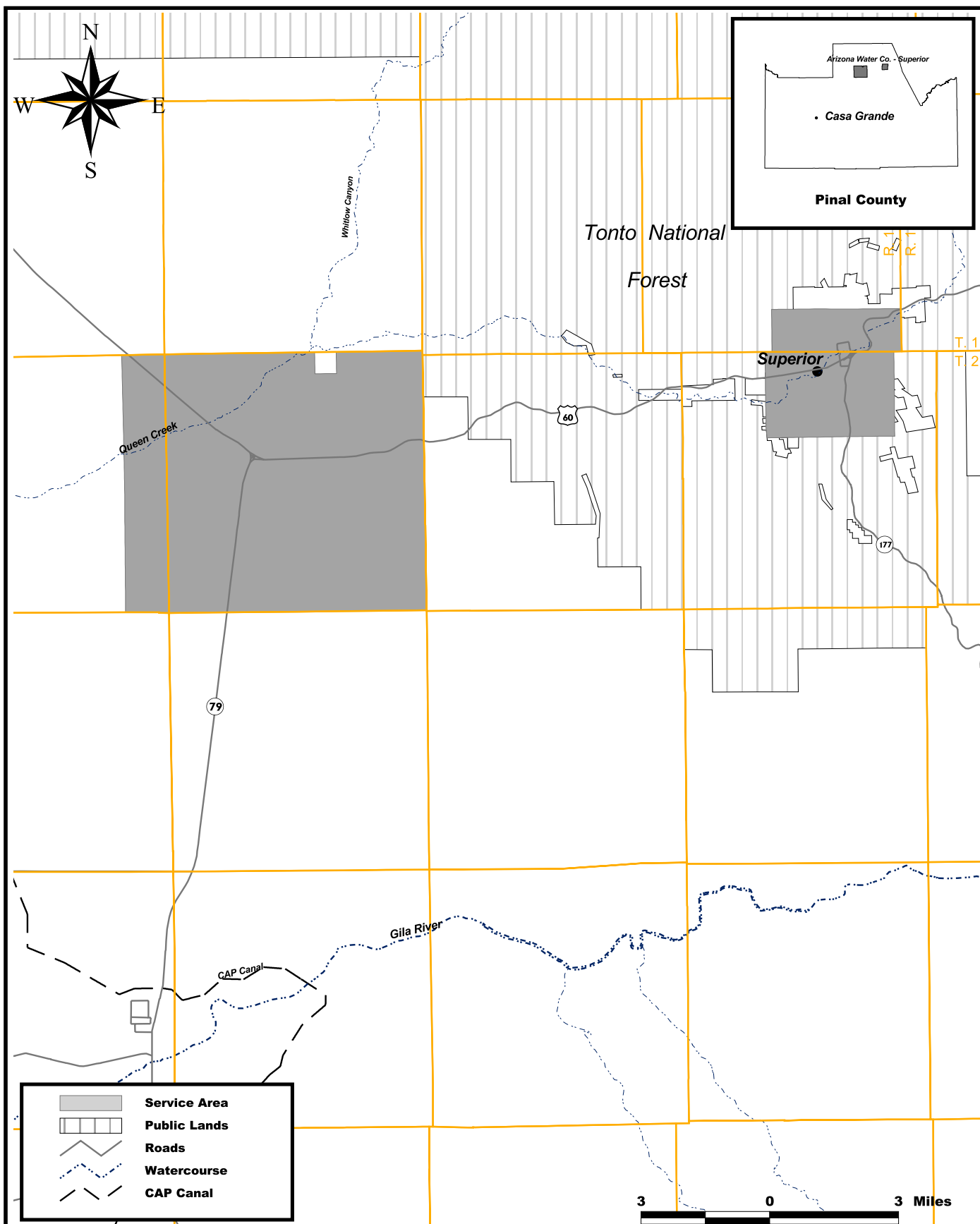
The Town of Superior/Arizona Water Company-Superior is located 63 miles east of Phoenix in Pinal County. The town is in a mountainous setting at an elevation of 2,882 feet and is surrounded by peaks such as the Iron Mountain at 6,056 feet. Major employment in the Town of Superior/Arizona Water Company-Superior includes mining, trade and service. The community is improving its trade and service sector in order to expand the income from tourism. Agriculture is significant to the local economy and ranching is conducted in the surrounding areas. The Town of Superior/Arizona Water Company-Superior service area is located in two units, one surrounding Florence Junction and the other surrounding Superior itself.

A. Plans to Take and Use CAP Water

The Town of Superior/Arizona Water Company-Superior currently has no contract for CAP water. Under the Settlement Alternative, Superior would receive 285 af of CAP water. That CAP water would be delivered for a 50-year contract period (i.e., from 2001-2051). The CAP water would be used to supplement both current and projected water supply demands over the next 50 years and would help reduce the continuing dependence on pumping groundwater from an overdrafted groundwater system. Table L-M&I-99 outlines the proposed allocations by alternative.

Table L-M&I-99 CAP Allocation Draft EIS Town of Superior/Arizona Water Company-Superior– Proposed CAP Allocation*		
Alternative	Allocation (in afa)	Priority
Settlement Alternative	285	M&I
No Action	0	-
Non-Settlement Alternative 1	285	M&I
Non-Settlement Alternative 2	0	-
Non-Settlement Alternative 3A	0	-
Non-Settlement Alternative 3B	312	NIA
Existing CAP Allocation	-	-
* If the allocation is not accepted, then the 285 af (or 312 af) from the Town of Superior/Arizona Water Company-Superior would be recommended for the Arizona Water Company for use in Superior or Apache Junction.		

Figure L-M&I-50 shows the service area for the Town of Superior/Arizona Water Company-Superior. The service area covers approximately 22,634 acres. The Town of Superior is located approximately 30 miles away from the closest connection to CAP water. Specific plans to convey the CAP water to Superior are not known at this time. Superior would use the CAP water for irrigation of greenbelt areas and possibly for potable uses. The Arizona Water Company is the current potable water supplier to the Town of Superior. No facilities currently exist to convey the water from the CAP system to the



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**CAP Allocation Draft EIS
General Location Map
Town of Superior / Arizona Water Company - Superior**

Figure #L-M&I-50

Arizona Water Company's service area in the Town of Superior (Chavez 2000).

B. Population Projection

The estimated 2001 population level for the Town of Superior/Arizona Water Company-Superior is 3,483, and the estimated 2051 population level is 3,709.

C. Water Demand and Supply Quantities

As previously shown in Appendix C- M&I Sector Water Uses, it is estimated that water demand in the Town of Superior/Arizona Water Company-Superior would increase from 493 af in year 2001 to 525 af in year 2051. The projected water uses both by water source and alternatives are provided below in Table L-M&I-100. Based on anticipated water demands, CAP water which would be allocated under the Settlement Alternative would provide 58 percent and 54 percent of the current estimated water supply required for the Town of Superior/Arizona Water Company-Superior for the years 2001 and 2051, respectively.

Table L-M&I-100 CAP Allocation Draft EIS Town of Superior/Arizona Water Company-Superior- Projected Water Use										
Alternative	Annual CAP Deliveries		Groundwater		Effluent		CAGR D (Groundwater)		Total Demand	
	2001	2051	2001	2051	2001	2051	2001	2051	2001	2051
Settlement Alternative	285	285	0	0	0	0	208	240	493	525
No Action	0	0	0	0	0	0	493	525	493	525
Non-Settlement Alternative 1	285	285	0	0	0	0	208	240	493	525
Non-Settlement Alternative 2	0	0	0	0	0	0	493	525	493	525
Non-Settlement Alternative 3A	0	0	0	0	0	0	493	525	493	525
Non-Settlement Alternative 3B	285	285	0	0	0	0	208	240	493	525
Note: A more detailed breakdown of supplies may be found in Appendix C.										

It is estimated that the demand for water at the end of the CAP contract period would be approximately 525 af. For all alternatives, there is estimated to be no unmet demand. In the Settlement Alternative, Non-Settlement Alternative 1 and Non-Settlement Alternative 3B, 285 afa of demand is met by the additional CAP allocation. Alternatively, this 285 afa of demand is met by CAGR D membership under the No Action Alternative and Non-Settlement Alternative 2, and Non-Settlement Alternative 3A.

D. Environmental Effects

The following sections include a general description of existing conditions relating to land use, water resources and socioeconomics for each entity. The following summaries also include a description of the existing conditions and brief description of the impacts to biological and cultural resources that would result from construction of CAP delivery facilities and conversion of desert and agricultural lands to urban uses.

1. Land Use

Land use data for the Town of Superior/Arizona Water Company were obtained based upon the review of 1998 aerial photographs and the result of the field surveys and habitat mapping completed as part of the biological analysis in this EIS Table L-M&I-101 provides the projected acres of land within the Town of Superior/Arizona Water Company-Superior service area, which are agriculture, desert or urban, and the number of acres expected to change from the existing category for the years 2001 and 2051.

Table L-M&I-101 CAP Allocation Draft EIS Town of Superior/Arizona Water Company-Superior – Projected Land Use Changes Within the service area(in acres)							
Alternative	Year	Agriculture	Agriculture Urbanized	Desert	Desert Urbanized	Urban	Changes in Urban Acreage
Settlement Alternative	2001	0	-	2,929	-	101	-
	2051	0	0	2,891	38	139	38
No Action	2001	0	-	2,929	-	101	-
	2051	0	0	2,891	38	139	38
Non-Settlement Alternative 1	2001	0	-	2,929	-	101	-
	2051	0	0	2,891	38	139	38
Non-Settlement Alternative 2	2001	0	-	2,929	-	101	-
	2051	0	0	2,891	38	139	38
Non-Settlement Alternative 3A	2001	0	-	2,929	-	101	-
	2051	0	0	2,891	38	139	38
Non-Settlement Alternative 3B	2001	0	-	2,929	-	101	-
	2051	0	0	2,891	38	139	38

2. Archaeological Resources

Survey coverage of the Town of Superior/Arizona Water Company-Superior service area is generally low. The easternmost parcel has been examined only via linear surveys; approximately 10 historic sites, including buildings, roads, trails, and sites related to

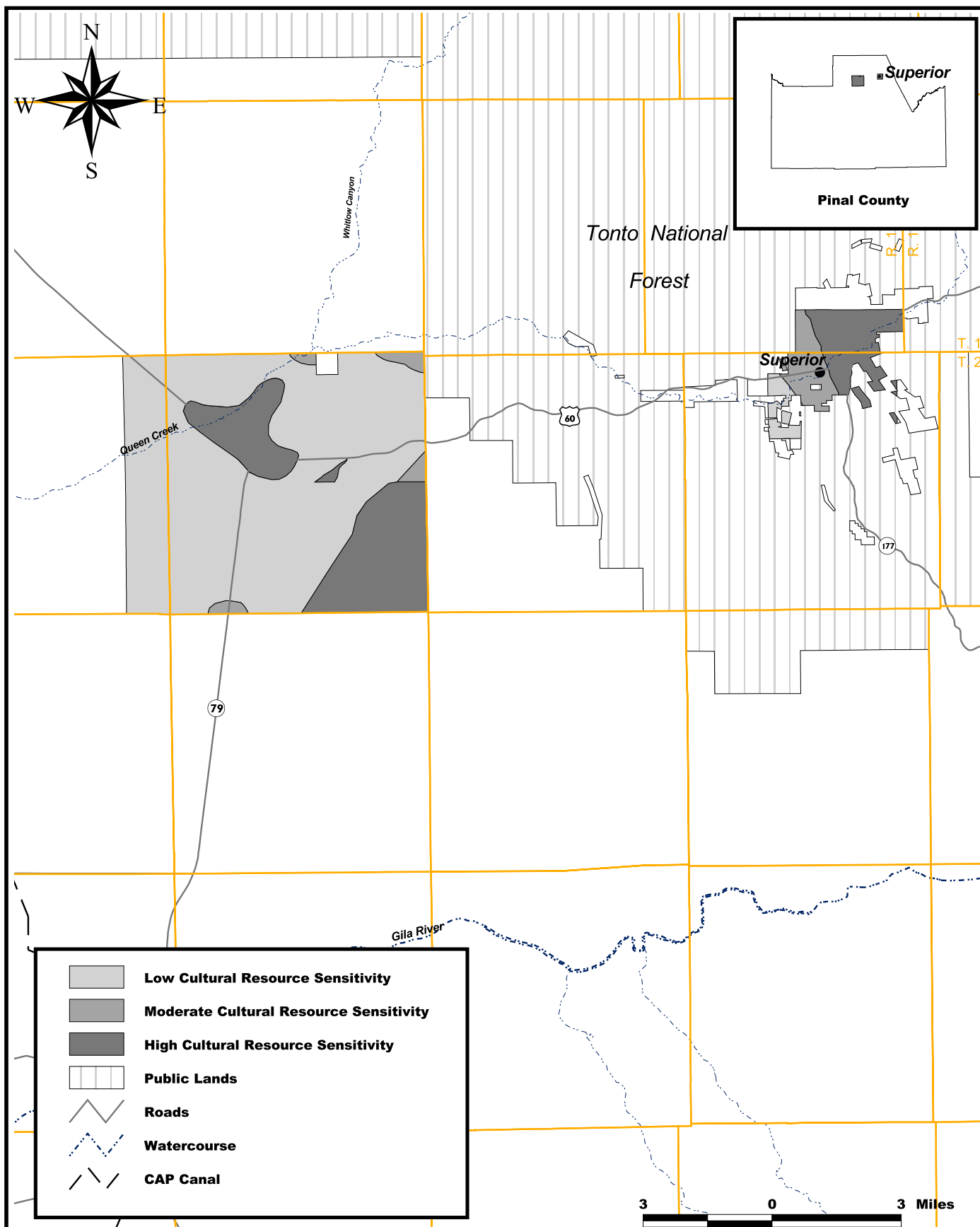
mining, have been documented near Superior City limits. Camps, prospecting loci, shafts, and other sites associated with the area's gold and silver mines (e.g., Queen Creek, Belmont, Grand Pacific) are abundant in this area. In the high cultural sensitivity areas in the north-central and southeastern portions of the westernmost parcel, linear surveys and small block surveys have identified numerous prehistoric sites, including large Hohokam villages (e.g., Los Montículos), prehistoric agricultural features (e.g., field houses, check dams, terraces), artifact scatters, and special-use sites (e.g., lithic quarries). Historic resources include roads (e.g., AZ U:11:70(ASM), historic U.S. 60/70/80/89), railroads, and associated transportation-related features.

Cultural resource sensitivity areas in the Town of Superior/Arizona Water Company-Superior MPA are shown on Figure L-M&I-51. Based on the limited data used to generate the cultural sensitivity designations, the potential for cultural resource impacts in the Town of Superior/Arizona Water Company-Superior service area is high to moderate. Mitigation of cultural resource impacts due to urban expansion would be determined by local jurisdictions and development of applicable permit requirements (such as the CWA Section 404 permit). Impacts on cultural resources due to future land use changes would be identical for each of the five alternatives. Mitigation for such impacts would be dependent on the requirements of the local jurisdiction. Once the plans for taking delivery of CAP water are finalized, Reclamation would carry out additional cultural resource compliance as appropriate, prior to water delivery.

3. Biological Resource

Existing Habitats

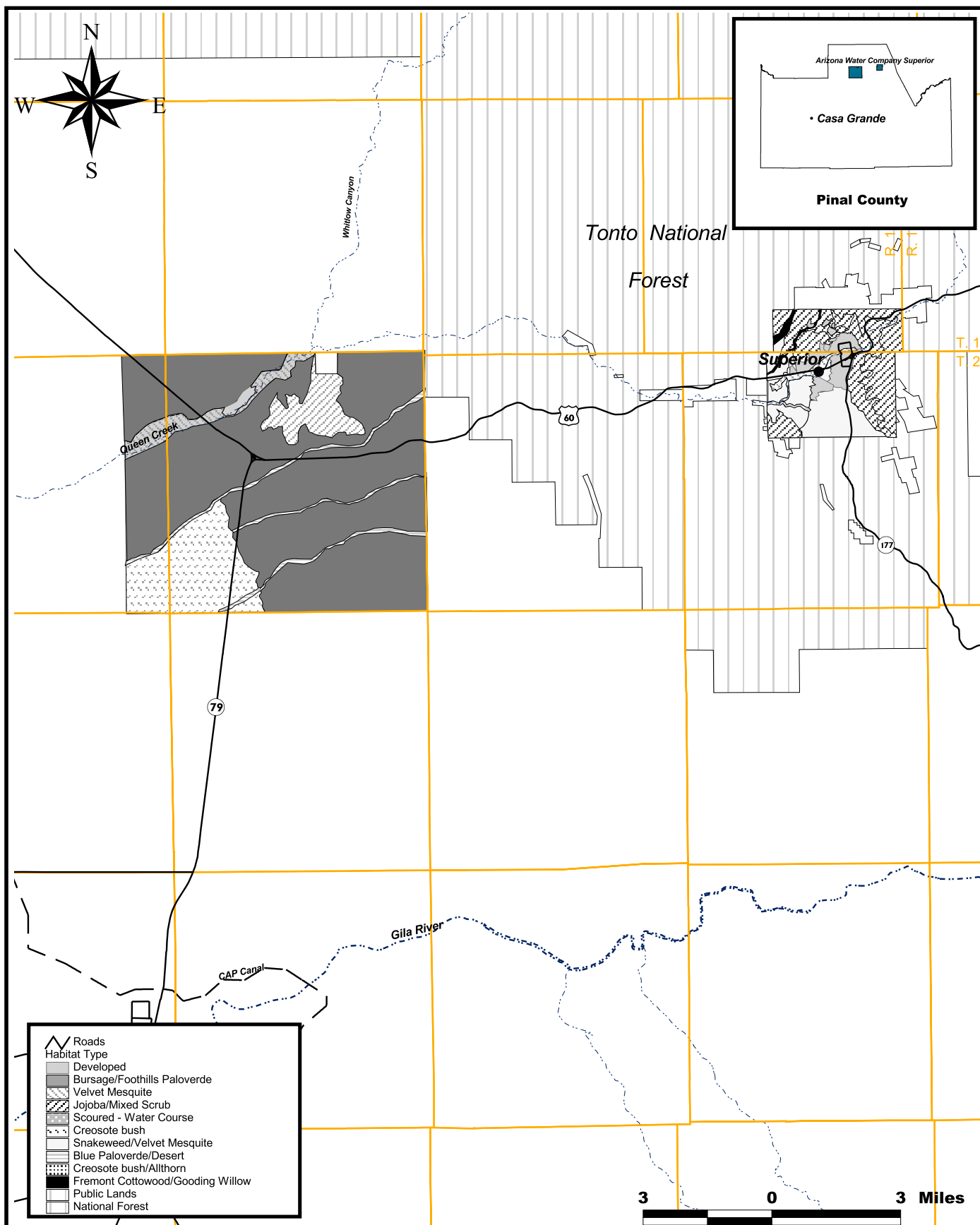
Low mountains (to 3,350-foot elevation) dominate the north-central portion of the Florence Junction area of the Town of Superior/Arizona Water Company-Superior service area. The steeper slope and rocky ridges support Jojoba/Mixed Scrub Association. Alluvial fans spread from these rocky ridges and merge into broad plains in the southern portion. Bursage-Foothill Paloverde Association occurs on the alluvial fans and eastern plains where co-dominants include buckhorn cholla, Engelmann hedgehog, chain-fruit cholla, and creosote-bush. Other common trees include velvet mesquite, desert ironwood, and saguaro. The distribution of saguaros is moderately dense. Creosote-bush Association occurs in the deeper soils. Creosote-bush frequency is high and tree frequency is very low. Near Superior, most vegetation of steeper slopes (to 4,500-foot elevation) is Jojoba/Mixed Scrub Association. Co-dominants include snakeweed, fairy-duster, brittle-bush, and Engelmann prickly-pear. Tree species include foothill paloverde, crucifixion-thorn, blue-paloverde, velvet mesquite, mountain-laurel, and saguaro. The distribution of saguaros is moderately dense. Disclimax Grassland Association occurs on the deeper soils around Superior and is dominated by snakeweed and Engelmann prickly-pear. Common trees include saguaro, blue-paloverde, foothill paloverde, and velvet mesquite. Riparian woodland, with Fremont cottonwood and Goodding willow occurs along Queen Creek, which are perennial in certain locations. The habitat zones are shown on Figure L-M&I-52.



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**CAP Allocation Draft EIS
Cultural Resources
Town of Superior / Arizona Water Company - Superior**

Figure #L-M&I-51



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**CAP Allocation Draft EIS
Habitat Zones
Town of Superior / Arizona Water Company - Superior**

Figure No. L-M&I-52

Table L-M&I-102 provides the habitat acreages for the habitat zones described above.

Table L-M&I-102 CAP Allocation Draft EIS Town of Superior/Arizona Water Company-Superior- Habitat Acreages	
Vegetation Name	Acres
Developed	101
Bursage/Foothills Paloverde	1,854
Velvet Mesquite	101
Joboa/Mixed Scrub	402
Creosote-Bush	312
Snakeweed/Velvet Mesquite	141
Blue Paloverde/Desert	118
Fremont Cottonwood/Goodding Willow	2
Total	3,031

Impacts to Biological Resources

Under the No Action Alternative, urban growth within the Town of Superior/Arizona Water Company-Superior service area would result in loss of an estimated 38 acres of Sonoran desertscrub and associated wildlife resources. Under the action alternatives, there is no difference in impacts from the No Action baseline. With regard to construction of CAP delivery facilities, Reclamation would carry out additional environmental review once plans are developed.

Potential T&E Species and Acres of Potential T&E Species Habitat

Because the allocation of CAP water has no effect on urban growth, there would be no effect on T&E species from the CAP allocation. The Town of Superior/Arizona Water Company-Superior would be responsible for complying with the relevant provisions of the ESA as it permits and approves future urban growth.

The Town of Superior/Arizona Water Company-Superior service area is located within Pinal County for which there are 13 T&E species listed by USFWS. Potential habitat only exists for cactus ferruginous pygmy-owl, southwestern willow flycatcher, Arizona hedgehog cactus, and Arizona agave. Approximately 2,073 acres of potentially suitable habitat for the cactus ferruginous pygmy-owl were identified within the Town of Superior/Arizona Water Company-Superior service area. Also, approximately 1,182 acres above 3,000 feet of potential suitable habitat for Arizona agave were identified. Potentially suitable habitat for Arizona hedgehog cactus exists on rocky, steep slopes, which are not likely to be developed. Potentially suitable habitat for southwestern willow flycatcher may occur in isolated pockets along Queen Creek. However, construction within the riparian

corridor would require issuance of CWA Section 404 permits by the Corps. As part of the permitting process, the Corps would have to comply with Section 7 of the ESA, and detailed surveys for T&E species would be carried out as necessary.

4. Water Resources

Demands in the Town of Superior have historically been met by pumping groundwater from the basin fill in the vicinity of Florence Junction (east of Superior) and piping that water to Superior. Limited data are available on groundwater level conditions and groundwater quality near those wells.

Estimated groundwater level impacts are summarized in Table L-M&I-103, which shows the estimated groundwater level changes for the period from 2001-2051 as well as the groundwater level impacts or the difference between the change in groundwater levels for each alternative relative to the change for the No Action Alternative. Under the No Action Alternative, groundwater levels would decline by about 36 feet from 2001 to 2051. This decline primarily reflects the continued groundwater outflow toward NMIDD to the west. There would be the potential for subsidence in this area due to the declining groundwater levels.

Groundwater levels under the Settlement and Non-Settlement Alternatives would also decline over the 2001 to 2051 period. These declines would be greater than the declines under the No Action Alternative and could result in additional subsidence relative to the No Action Alternative. The larger declines in groundwater levels primarily occur due to greater groundwater level declines in NMIDD to the east, and the resulting increased groundwater flow to NMIDD.

Table L-M&I-103 CAP Allocation Draft EIS Town of Superior/Arizona Water Company-Superior –Groundwater Data Table		
Alternative	Florence Junction	
	Estimated Groundwater Level Change from 2001-2051 (in Feet)	Groundwater Level Impact** (in Feet)
No Action	-36	--
Settlement Alternative	-80	-44
Non-Settlement Alternative 1	-47	-12
Non-Settlement Alternative 2	-83	-47
Non-Settlement Alternative 3A	-77	-41
Non-Settlement Alternative 3B	-75	-39
*Values correspond to the Florence Junction sub-area, as discussed in Appendix I. ** Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration. The estimated impact is considered to be more accurate than the estimated decline in groundwater levels.		

5. Socioeconomic

The same population growth is supported under all alternatives, including the No Action Alternative. However, the cost of providing water may vary by alternative. Costs were estimated, on a per af basis, for providing the proposed allocations and, in their absence, alternative water supplies. The alternative water supplies include joining the CAGR and, if needed, treating and reusing effluent. The difference in cost for this small increment of Town of Superior/Arizona Water Company-Superior's total water supply is considered insignificant.

Table L-M&I-104 CAP Allocation Draft EIS Town of Superior/Arizona Water Company-Superior –Cost of Potable Water for Additional Allocation Increment		
Alternative	Cost of Water (per af)*	Water Source
Settlement Alternative	154 ^a	CAP Allocation
No Action	259-261 ^b	CAGR
Non-Settlement Alternative 1	154 ^a	CAP Allocation
Non-Settlement Alternative 2	259-261 ^b	CAGR
Non-Settlement Alternative 3A	259-261 ^b	CAGR
Non-Settlement Alternative 3B	154 ^a	CAP Allocation
Notes: a. Estimated average unit cost in year 2000 dollars. b. Estimated range of unit costs in year 2000 dollars. Range is due to estimated change in groundwater pumping lifts during study period and does not include wellhead treatment costs.		